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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
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09/054,986 04/03/98 STAVNES

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EXAMINER

IM22/0914

NOLAN, S

ART UNIT

PAPER NUMBER

1772

2

DATE MAILED:

09/14/99

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**Please find below and/or attached an Office communication concerning this application or proceeding.**

**Commissioner of Patents and Trademarks**

# Office Action Summary

Application No.  
**09/054,986**

Applicant(s)  
**STAVNES et al**

Examiner  
**Sandra Nolan**

Group Art Unit  
**1772**



☐ Responsive to communication(s) filed on \_\_\_\_\_

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

## Disposition of Claims

☒ Claim(s) 1-39 is/are pending in the application.

Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

☐ Claim(s) \_\_\_\_\_ is/are allowed.

☒ Claim(s) 1-39 is/are rejected.

☐ Claim(s) \_\_\_\_\_ is/are objected to.

☐ Claims \_\_\_\_\_ are subject to restriction or election requirement.

## Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☐ All ☐ Some\* ☐ None of the CERTIFIED copies of the priority documents have been

☐ received.

☐ received in Application No. (Series Code/Serial Number) \_\_\_\_\_

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\*Certified copies not received: \_\_\_\_\_

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

## Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). \_\_\_\_\_

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

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## **DETAILED ACTION**

### ***Summary of Claims***

1. The pending claims can be summarized as follows:

Claim 1 is directed to an arc-quenching compositions containing 70% organic content and comprising melamine, fiber and binder. Claims 2 and 3 depend from claim 1 (claim 3 depends on claim 2) and call for organic fiber and a Markush group of fibers, respectively. Claim 4 depends on claim 1 and specifies a thermoset binder. Claim 5 depends on claim 4 and lists a Markush group of epoxy resins. Claim 6 depends on claim 1 and calls for 5-30% melamine. Claim 7 depends on claim 1 and requires epoxy resin and curing agent. Claim 8 depends on claim 1 and covers acrylic fiber. Claim 9 depends on claim 1 and specifies amounts of melamine, resin mix and acrylic fiber. Claim 10 depends on claim 1 and call for a circuit interrupting device. Claim 11 depends on claim 1 and is directed to a method of quenching an electric arc. Claim 12 depends on claim 1 and calls for a method of extinguishing an arc.

Claim 13 refers to an arc-quenching composition. Claim 14 depends on claim 14 and calls for 10-30% of filler. Claim 15 depends on claim 14 and recites organic fiber. Claim 16 is directed to an arc-quenching composition containing certain ranges of ingredients. Claim 17 calls for an acrylic fiber. Claim 18 specifies the amount of melamine. Claim 19 refers to the use of a [bisphenol?] A epoxy resin and a curing agent and specifies the amount of the combination. Claim 20 refers to acrylic fiber and its amount. Claim 21 is drawn to an electrical circuit containing the fiber, binder and filler combination of earlier claims.

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Claim 22 is drawn to a fuse tube containing an arc quenching composition.

Claim 23 is to a multi-layer laminate containing melamine, fiber and binder.

Claims 24-26 are directed to fuse tubes having an outer layer of glass-reinforced resin over an inner core containing melamine.

Claim 27 covers a method for quenching arcs by providing an arc-quenching compound in the bore of a fuse tube.

Claims 28-35 recite fuse tubes having tapered bores.

Claims 36-39 are drawn to methods of making arc-quenching tubes by winding fibers in certain patterns to produce a tube.

### ***Claim Objections***

2.. Claim 9 is objected to because of the following informalities: "bisphenol" is misspelled. Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

3. Claims 1-27, and 36-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rinehart (US 5,015,514) in view of Tobin (US 4,349,803).

Rinehart shows filament winding operations used to made fuse tubes from compositions containing 40 to 80% by weight inorganic filler (abstract, claim 1), bisphenol A epoxy resin (col. 1, lines 16+), curing agent (col 4, line 50+), acrylic fibers (col. 6, lines 1 and col. 8, table). Rinehart does not include melamine as the arc-quenching filler. An outer layer of glass fiber reinforced thermosetting resin is disclosed at col. 8, lines 16+.

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Tobin shows the use of melamine as an arc-quenching filler in analogous epoxy-bound fuse tubes. Tobin does not show all of the other ingredients claimed.

It would have been obvious to one of ordinary skill in the art at the time that the invention was made to employ suitable amounts of the melamine filler of Tobin, for its known arc-quenching properties, in the fuse tube compositions, production methods, and fuse tubes of Rinehart. The winding of fibers on a mandrel to minimize gaps would have been an obvious method of improving arc-quenching efficiency.

4. Claims 28-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rinehart and Tobin as applied to claims 1-27 and 36-39 above, and further in view of Schmunk (US 4,313,100).

Rinehart and Tobin are discussed above.

Schmunk shows tapered fuse tubes having bores that are designed with angles (1 to 3 degrees) that obviate clogging of the bore. See the abstract.

It would have been obvious to one having ordinary skill in the art at the time that the invention was made to employ the anti-clogging bore design of Schmunk when making fuse tubes based upon the combination of the teachings of Rinehart and Tobin.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sandra M. Nolan, whose telephone number is (703) 308-9545. The

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examiner can normally be reached on Monday through Thursday from 7:00 am to 4:00 pm. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ellis P. Robinson, can be reached on (703) 308-2364. The fax phone number for the organization where this application is assigned is (703) 305-5408.

The telephone number for the receptionist is (703) 308-0661.



Ellis Robinson  
Supervisory Patent Examiner  
Technology Center 1772

SMN/smn  
September 7, 1999  
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